Revised 7/10/98

INDIANA DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS DIVISION

SAMPLING STOCKPILED AGGREGATES
ITM No. 207-98T

1.0 SCOPE

1.1 This test method covers sampling fine and coarse aggregate stockpiles. The instructions in this method supplement stockpile sampling in AASHTO T 2.

1.2 The values stated in either SI metric or acceptable English units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, English units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore each system shall be used independently of the other, without combining values in any way.

1.3 This ITM may involve hazardous materials, operations, and equipment. This ITM does not purport to address all of the safety problems associated with the ITM's use. The ITM user's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 REFERENCED DOCUMENTS

2.1 AASHTO Standards
T2 Sampling of Aggregates

3.0 SIGNIFICANCE AND USE

3.1 This ITM is used to obtain samples of materials when sampling and testing after incorporation into the work is impractical. This includes gradation and deleterious control of portland cement concrete aggregates, compacted aggregates, subbase aggregates, and riprap aggregates. Stockpile sampling is also used for deleterious control of HMA aggregates, and to obtain special samples, such as production quality samples, samples for chemical analysis, etc.

4.0 APPARATUS

4.1 Square bit shovel.

4.2 Fire shovel or sampling tube.

5.0 SAMPLING

5.1 Coarse Aggregate Sampling.

5.1.1 Using a front-end loader, dig into the stockpile and set aside a small pile of 10 to 15 Mg (10 to 15 t) of material. This should be done in the same manner as if a truck is being loaded for shipment (figures 1 and 2). When forming the small pile the loader bucket should be as low as possible and roll the material from the bucket rather than dumping the material. Reducing the distance the material is allowed to free-fall will reduce the amount of segregation that may occur in the small pile (figure 3). Each additional bucket load of material should be taken and dumped in the same manner as set out above and should be placed uniformly over the preceding one (figure 4).

5.1.2 Thoroughly mix the small pile. Using the loader bucket, go to the end of the oblong pile and roll the material over. Keeping the loader bucket as low as possible, push the bucket into the material until the front of the bucket is past the midpoint of the original pile. The loader bucket should then be slowly raised and rolled forward thus producing a smooth mixing of the material (figures 5, 6, and 7). Go to the opposite end of the pile and repeat this mixing procedure. If the pile does not appear to be uniform, additional mixing should be done.

5.1.3 The pile is now ready for sampling. Do <u>not</u> strike off the top (figure 8). The sample shall be taken at the center of the volume which is approximately one-third of the height of the pile. The sample shall consist of not less than six full shovels of material taken at equal increments around the pile (figures 9, 10, and 11). A square bit shovel shall be used and it shall be inserted full-depth horizontally into the material and raised vertically. Care should be taken to retain as much of the material as possible on the blade of the shovel (figure 12).

5.2 Fine Aggregate Sampling.

5.2.1 Fine aggregate samples are normally obtained as set out above for coarse aggregate, except a fire shovel or sampling tube shall be used.

5.2.2 When fine aggregate stockpiles are constructed so as to not exceed the height of the sampler, and when segregation is not apparent, the samples may be taken directly from the face of the large stockpile. It is recommended that the surface crust first be removed from the sampling area.

6.0 SAFETY

6.1 Samples should not be obtained by climbing onto stockpiles due to the hazard of burial and suffocation from unstable stockpiles of unconsolidated materials. Also, over-steepened stockpiles may sluff and engulf personnel in the immediate area.

6.2 Personnel requiring additional information concerning specific sampling situations are directed to contact the appropriate District Materials and Tests Engineer.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

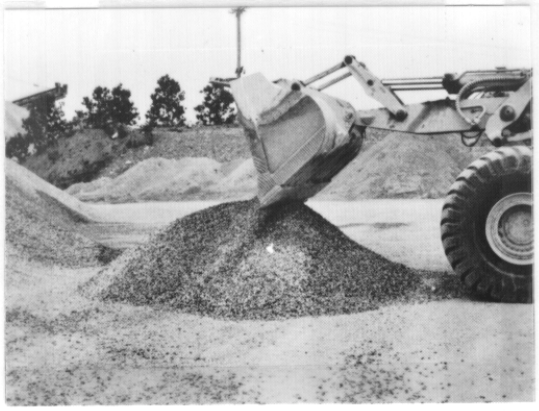


Figure 7

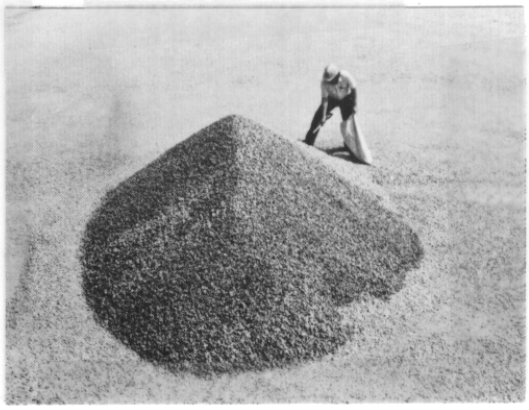
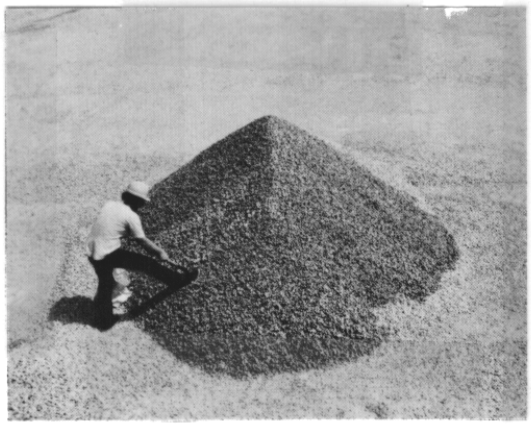


Figure 8



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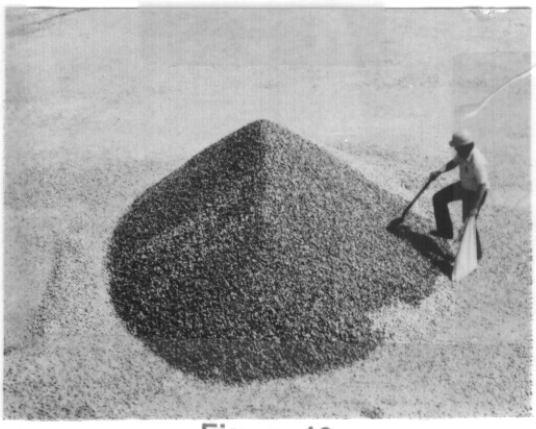

Figure 10

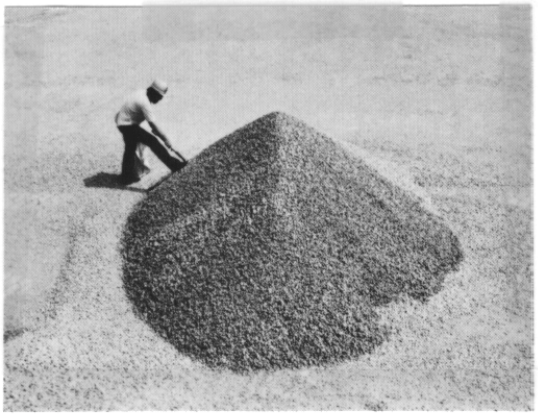

Figure 11

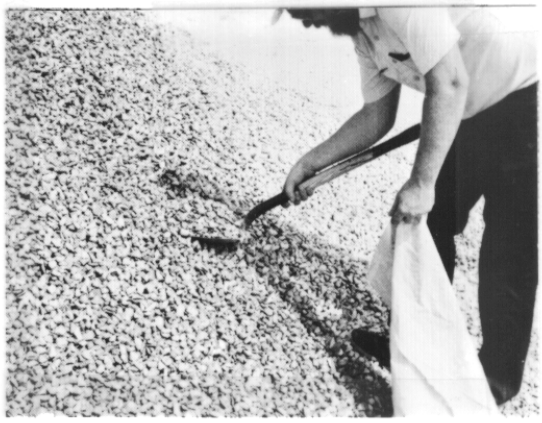

Figure 12